DIRECT TESTIMONY AND EXHIBITS
OF
GEORGE W. EVANS
ON BEHALF OF
THE SOUTH CAROLINA OFFICE OF REGULATORY STAFF
DOCKET NO. 2019-239-E
IN RE: DOMINION ENERGY SOUTH CAROLINA, INCORPORATED'S REQUEST FOR APPROVAL OF AN EXPANDED PORTFOLIO OF DEMAND SIDE MANAGEMENT PROGRAMS AND A MODIFIED DEMAND SIDE MANAGEMENT RATE RIDER

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND OCCUPATION.

A. My name is George W. Evans. My address is 358 Cross Creek Trail, Robbinsville, North Carolina 28771. I am the President of Evans Power Consulting, Inc.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I received a Bachelor of Science in Applied Mathematics from the Georgia Institute of Technology in 1974. In 1976, I received a Master of Science in Applied Mathematics, also from the Georgia Institute of Technology. My area of concentration was probability and statistics. In 1980, I joined Energy Management Associates, Inc. ("EMA"), the company responsible for the development of the premier electric utility modeling tools, PROMOD®, PROSCREEN®, PROVIEW® and MAINPLAN®. While at EMA, I worked with approximately fifty (50) major electric utilities in the United States and Canada in the application of these modeling tools for generation expansion planning, fuel budgeting, the analysis of power purchases and the development of optimal maintenance schedules for generating units.

In 1989, I left EMA to join GDS Associates, Inc. ("GDS"), a multi-service energy consulting and engineering firm located in Marietta, Georgia. At GDS, I was a principal and the Manager of System Modeling. In this position, I was primarily responsible for performing analyses and presenting expert testimony concerning integrated resource planning, forecasting of system production costs, developing estimates of the likelihood of service interruptions, and developing estimates of replacement power costs and related activities.

In August of 1997, I left GDS to join Slater Consulting as a Vice President. In December of 2011, I left Slater Consulting and formed Evans Power Consulting, Inc. A copy of my current resume is included as Exhibit GWE-1.

Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY REGARDING ELECTRIC UTILITIES?

A. Yes. I have provided expert testimony on fifty-eight (58) previous occasions, before the public utility commissions in Alabama, Arkansas, Colorado, Delaware, Georgia, Michigan, Mississippi, Nevada, Oklahoma, Pennsylvania, South Carolina, South Dakota, and Utah; before the Federal Energy Regulatory Commission; and in state court and federal court.

Q. HAVE YOU TESTIFIED BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA ("COMMISSION")?

A. Yes. I have presented expert testimony before this Commission in Docket Nos. 2008-196-E, 2013-208-E and 2013-298-E. Docket Nos. 2013-208-E and 2013-298-E were similar to this case, in that they were requests by South Carolina electric utilities to expand demand side portfolios and modify the computation of demand-side rate riders.

Q. DO YOU HAVE OTHER RELEVANT EXPERIENCE IN SOUTH CAROLINA?

A. Yes. Since 2012, I have served the South Carolina Office of Regulatory Staff ("ORS") by assisting in the annual reviews of the demand side management ("DSM") and energy efficiency ("EE") rate riders of Duke Energy Carolinas, LLC ("DEC"), Duke Energy Progress, LLC ("DEP") and Dominion Energy South Carolina, Inc. ("DESC" or "Company") formerly known as South Carolina Electric & Gas Company.

Q. WHY WERE YOU RETAINED BY ORS IN THIS PROCEEDING?

A. I was retained by ORS in this proceeding to:

1) Verify DESC's proposals, methodologies, and calculations contained in the Application and direct testimony are in compliance with S.C. Code Ann. § 58-37-20 and Commission Order No. 2010-472 as affirmed and modified by Commission Order No. 2013-826;
2) Conduct analysis and develop recommendations regarding DESC's comprehensive potential study ("Potential Study") (Application, Exhibit 1) and DSM Program ("Program" or "Programs") analysis of its portfolio of current and proposed DSM Programs;

3) Conduct analysis and develop recommendations regarding the proposed rate rider mechanism to recover Program costs, net lost revenues, and shared savings incentives associated with proposed Programs; and,

4) Verify whether the rate rider mechanism is a means by which savings and Program objectives will or will not be met.

Q. WHAT GUIDING PRINCIPLES INFORMED YOUR REVIEW OF THE COMPANY'S FILING?

A. My review and resulting recommendations are based on standard industry principles and on the guidance provided in S.C. Code Ann. § 58-37-20 which states in part:

> The South Carolina Public Service Commission may adopt procedures that encourage electrical utilities and public utilities providing gas services subject to the jurisdiction of the commission to invest in cost effective energy efficient technologies and energy conservation Programs. If adopted, these procedures must: provide incentives and cost recovery for energy suppliers and distributors who invest in energy supply and end-use technologies that are cost-effective, environmentally acceptable, and reduce energy consumption or demand; allow energy suppliers and distributors to recover costs and obtain a reasonable rate of return on their investment in qualified demand-side management Programs sufficient to make these Programs at least as financially attractive as construction of new generating facilities; require the Public Service Commission to establish rates and charges that ensure that the net income of an electrical or gas utility regulated by the commission after implementation of specific cost-effective energy conservation measures is at least as high as the net income would have been if the energy conservation measures had not been implemented.

Q. BRIEFLY DESCRIBE THE COMPANY'S REQUEST IN THIS PROCEEDING.

A. In the Application filed on June 28, 2019, and supported by Company testimony filed on October 2, 2019, the Company:

1) Proposes changes to the existing suite of Programs;

2) Introduces two (2) new Programs;

3) Proposes modifications to the Opt-Out provisions; and,

4) Proposes certain modifications to the Company's previously approved cost recovery, net lost revenue, and shared savings incentive mechanisms.

The Company states in the Application that the proposed Programs "represent a balanced suite of Programs that are reasonably practical from an implementation and customer receptivity standpoint, are technically and economically justified, and have a reasonable likelihood of providing significant savings to customers and the system" (Application, p. 8). The Company proposes changes to the recovery mechanisms and DSM Rate Rider that will allow "DESC to recover its costs spent on DSM Programs along with lost revenues and an incentive equal to a portion of the customer savings created by the Company's DSM Programs" in accordance with S.C. Code Ann. § 58-37-20 (Rooks Direct, pp. 2-3).

Q. PLEASE PROVIDE A SUMMARY OF YOUR OBSERVATIONS RELATED TO THE COMPANY'S PROPOSALS.

A. The Company's modified and expanded portfolio is a reasonable mix of Programs designed to achieve benefits and energy savings to residential, commercial and industrial customers. ORS recommends modifications to the Company's Rate Rider and Shared Savings Incentive. ORS recommends that the Company re-evaluate new direct load control measures once the Company's Advanced Metering Infrastructure ("AMI") becomes available to customers in the Company's service territory. My review and recommendations are discussed in detail later in my testimony.

I. Current Programs and Proposed Changes

Q. WHAT PROGRAMS DOES THE COMPANY CURRENTLY OFFER?

A. As approved in Docket No. 2009-261-E, Order Nos. 2010-472, 2013-826, and 2014-381, the Company offers the following eight (8) Programs:

- Residential Customers:
  - Residential Appliance Recycling
  - Residential Neighborhood Energy Efficiency
  - Residential Heating & Cooling
  - Residential Home Energy Check-up
  - Residential Home Energy Reports
  - Residential EnergyWise Savings Store (Online Store)
- Commercial and Industrial Customers:
  - Commercial & Industrial EnergyWise for your Business
  - Commercial Small Business Direct Install

Q. IS THE COMPANY'S CHARACTERIZATION THAT THE COMPANY'S CURRENT SUITE OF PROGRAMS HAS BEEN SUCCESSFUL (GRIFFIN DIRECT, P. 9) AN ACCURATE CHARACTERIZATION?

A. Ms. Griffin's testimony is generally accurate. However, according to the latest Evaluation, Measurement, and Verification ("EM&V") Report, the Company spent 99% of projected Program Costs ($12,741,575), but achieved only 82% of projected energy savings (55,046 megawatt hours ("MWh") in the period December, 1 2016 through

November 30, 2017 (Program Year 7[1]), and achieved only 69% of projected demand savings (11.23 megawatts ("MW")) in the same period. Three (3) of the Company's eight (8) ongoing programs achieved energy savings well in excess of forecast in Program Year 7, while five (5) programs did not achieve forecasted energy savings. The results of ORS's annual reviews of the Company's Programs can be found in Docket Nos. 2014-44-E, 2015-45-E, 2016-40-E, 2017-35-E, 2018-42-E, and 2019-57-E.

Q. PLEASE SUMMARIZE THE COMPANY'S PROPOSED CHANGES TO EXISTING PROGRAMS.

A. The Company proposes to both add various new measures and increase the incentives paid to customers in many existing Programs. Tables 2 through 4 on pages 9 and 10 of the Application identify the Programs and modifications proposed by the Company. Nearly every existing Program will experience modifications in an effort to achieve the Company's goal of increasing participation in the Programs to raise energy and demand savings. The Company estimates these modifications will result in a 160% increase in annual energy savings over the life of the programs[2] and an approximate 10-fold increase in demand savings (to 115.5 MW).[3]

Q. ARE THE COMPANY'S PROPOSED MODIFICATIONS TO EXISTING PROGRAMS AND THE ESTIMATED IMPACTS TO COSTS AND SAVINGS REASONABLE?

A. Yes. I have reviewed and verified the Company's calculations and found them to

[1] Exhibit 2 of the Company's filing in Docket No. 2019-57-E.
[2] Pickles Direct, Exhibit No._ (DKP-1) ("Potential Study"), p. 25.
[3] Potential Study, p. 53.

be consistent with industry standards for Programs across the United States. The Potential Study appears reasonable, and the estimates of increased participation and energy savings are realistic.

Q. IS THE COMPANY'S GOAL OF INCREASING OUTREACH TO UNDERSERVED CUSTOMER GROUPS AND SMALL BUSINESSES REASONABLE?

A. Yes. In order to achieve maximum energy and demand savings, the Company will need to continue to expand not only its suite of Programs to match customer needs, but also expand marketing campaigns to reach different market segments to increase participation in the Programs.

II. Proposed Additional Programs

Q. WHAT PROGRAMS DOES THE COMPANY PROPOSE TO ADD TO ITS EXISTING SUITE OF PROGRAMS?

A. The Company proposes the following new Programs:

- Residential Multifamily
- Municipal LED Lighting

Q. PLEASE DESCRIBE THE COMPANY'S PROPOSED NEW PROGRAMS.

A. The Residential Multifamily Program will focus on offering customers, living in multifamily housing, installation of LED lamps, low-flow faucet aerators and low-flow showerheads. The Program is different than standard residential Programs targeted to home owners, as most multifamily homes are occupied by tenants who cannot control or install simple EE measures and are often underserved by EE Programs. In addition, the

Multifamily Program will target multifamily building owners and managers by offering similar EE measures for common areas, and upgrades to building's heating and air conditioning systems.

The Municipal LED Lighting Program will provide municipal lighting customers with bill credits to reduce the cost of replacing non-energy efficient streetlights with high-efficiency LED fixtures.

Q. WHAT IMPACT DOES THE COMPANY EXPECT THE PROPOSED NEW PROGRAMS TO HAVE ON ENERGY SAVINGS OVER THE NEXT FIVE YEARS?

A. The Company estimates that the Residential Multifamily Program will provide annual energy savings of 2,641 MWh in the first year of implementation, growing to 4,010 MWh after five years.[4] The Municipal LED Lighting Program is estimated to initially provide 3,017 MWh of annual savings, growing to 3,684 MWh after five years.[5]

Q. WHAT ARE THE ESTIMATED COSTS FOR THE NEW PROGRAMS?

A. The Company estimates the total program costs for the Residential Multifamily Program to be $830,140 in the initial year, growing to $1,041,943 after five years.[6] For the Municipal LED Program, the Company estimates the annual total program costs begin at $3,215,742 and grow to $3,850,088 after five years.[7]

III. <u>Evaluation Measures</u>

Q. DID YOU REVIEW THE COMPANY'S PROPOSED EVALUATION MEASURES

[4] Potential Study, p. 71.
[5] Potential Study, p. 78.
[6] Potential Study, p. 71.
[7] Potential Study, p. 78.

FOR THE MODIFIED AND ADDITIONAL PROGRAMS?

A. Yes. The proposed evaluation measures are consistent with previous evaluation measures as discussed and filed by the Company and reviewed by ORS.

Q. IS THE COMPANY'S USE OF THE TOTAL RESOURCE COST ("TRC") TEST TO MEASURE COST EFFECTIVENESS REASONABLE?

A. Yes. The TRC compares the sum of both customer and Company benefits to the sum of the customer and Company costs. This cost/benefit measure is appropriate to measure the cost effectiveness of proposed Programs and measures.

Q. IS THE COMPANY'S USE OF THE UTILITY COST TEST ("UCT") TO MEASURE THE VALUE OF LOAD REDUCTION AS A RESULT OF THE COMPANY'S DSM/EE MEASURES REASONABLE?

A. Yes. The UCT compares Company costs to Company benefits. This is the appropriate cost/benefit ratio to use when computing the value of load reduction.

Q. IS THE COMPANY'S CALCULATION OF AVOIDED ENERGY AND AVOIDED CAPACITY FOR DETERMINING THE VALUE OF LOAD REDUCTIONS AS A RESULT OF DSM PROGRAMS REASONABLE?

A. The calculation of avoided costs for determining the value of load reductions do not appear to be consistent with the Company's calculations used to compute the Public Utility Regulatory Policies Act of 1978 ("PURPA") avoided costs in Docket 2019-184-E. Although the value used by the Company in the Application seems to be reasonable, when compared to the calculations as proposed in the South Carolina Energy Freedom Act ("Act 62") avoided cost Docket No. 2019-184-E, the avoided cost calculations are inconsistent.

Q. SHOULD THE AVOIDED COST METHODOLOGY AND CALCULATIONS FOR DETERMINING THE VALUE OF LOAD REDUCTIONS BE CONSISTENT WITH THE AVOIDED COST METHODOLOGY AND RESULTS CALCULATED FOR PURPA AVOIDED COSTS?

A. The Company's avoided cost methodology should be consistent across the various Company business units that require an avoided cost calculation to determine rates and charges. The difference in results of avoided cost calculations is due to different inputs and assumptions specific to the Company business unit requiring an avoided cost value. The calculation of avoided costs to determine the value of load reductions includes avoided transmission and distribution costs for Program measures which occur at the customer site. Therefore, it is reasonable that the results of the DSM avoided cost calculation differ from the PURPA avoided cost calculation. However, a significant difference between the two (2) calculations, as in this case, should warrant further and extensive review to determine if the methodology, inputs, and assumptions for both calculations are accurate and reasonable.

Q. WOULD YOU RECOMMEND THE AVOIDED COST METHODOLOGY AND CALCULATIONS BE RE-EVALUATED AT LEAST EVERY TWENTY-FOUR (24) MONTHS IN CONJUNCTION WITH THE TIMING OF THE AVOIDED COST PROCEEDINGS FOR QFS AS REQUIRED UNDER ACT 62?

A. No. Avoided costs calculated to determine the value of load reduction for DSM Programs should be based on the most recently Commission approved avoided cost methodology. It is important to note the avoided costs are set for the life of the Program, which in this case, the Company is requesting a Program length of five (5) years. Changes to avoided costs would necessitate modifications to the Programs offered by the Company.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS REGARDING AVOIDED COSTS USED TO DETERMINE THE VALUE OF LOAD REDUCTIONS.

A. ORS recommends that avoided costs for DSM Programs be calculated based on the methodology approved pursuant to Act 62 in Docket No. 2019-184-E, which will be the most recently approved avoided cost methodology as of the Company requested implementation date of December 1, 2019. I also recommend the avoided costs not be modified until the five (5)-year Program period has expired. This will allow the proposed portfolio of Programs to be fully evaluated using the assumptions on which the five (5)-Year program will be based.

Q. WHAT IMPACT COULD YOUR AVOIDED COST RECOMMENDATION HAVE ON THE COMPANY'S PROGRAM IN THIS PROCEEDING?

A. Using the most recently approved avoided cost methodology and updated inputs and assumptions would ensure the accuracy of the cost effectiveness tests as it would be based on the most current data at the time the Programs are implemented. The cost effectiveness of the Programs as calculated using the UCT may change as a result of updating the avoided costs.

Q. PLEASE EXPLAIN YOUR RECOMMENDATION FOR FUTURE REVIEW OF POTENTIAL DIRECT LOAD-CONTROL MEASURES.

A. The Company evaluated a suite of new direct load-control Programs[8] as a part of

[8] Direct load control Programs allow the Company to remotely control certain appliances, such as air conditioners, during peak hours.

the Potential Study, but did not include any such Programs in the revised portfolio because the Programs did not prove to be cost effective over a 5-year period.[9] However, as noted in the Company's Application at paragraph 29, the rollout of the Company's AMI would support additional demand response Programs. Given this, and the fact that DEP and DEC currently have in place cost-effective direct load-control Programs, ORS recommends that the Commission order the Company to re-evaluate new direct load-control Programs once AMI becomes available in the DESC territory.

Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING THE COMPANY'S EM&V METHODS OR STUDIES?

A. No. The Company's EM&V methods have proven effective and no major changes are necessary.

IV. <u>Proposed Changes to Method of Cost Recovery and Rate Rider</u>

Q. PLEASE DESCRIBE THE COMPANY'S CURRENT METHOD OF COST RECOVERY AS APPROVED IN ORDER NOS. 2010-472 AND 2013-826.

A. Through the Rate Rider, the Company recovers the costs to administer the Programs ("Program Costs"), the lost revenues arising from the Programs ("Net Lost Revenues") and an incentive ("Shared Savings Incentive"). The Program Costs are amortized over five (5) years with carrying costs, and the Shared Savings Incentive is amortized over five (5) years without carrying costs. Carrying costs are computed using the 10-year U.S. Government Treasury Note rate plus 65 basis points. This rate as of September 26, 2019 was 2.345%. Net Lost Revenues are not amortized and are limited to a rolling three (3) year period.

[9] Potential Study, p. 45.

Q. WHAT CHANGES DOES THE COMPANY REQUEST FOR THE RATE RIDER COMPUTATION?

A. The Company is requesting that:

1) Program Costs be amortized over three (3) years instead of five (5) years;
2) The carrying costs rate applied to the unrecovered balance of Program Costs be updated to the Company's embedded cost of long-term debt, which is currently 5.95%; and,
3) It be authorized to increase the Shared Savings Incentive from the current level of 6% to 11.5%.

Q. WHAT IMPACT WILL THE COMPANY'S PROPOSED CHANGES TO COST RECOVERY HAVE ON THE RATE RIDER?

A. Table 1 below compares the Company's current Rate Riders to the estimated Rate Riders that would go into effect beginning in May 2020 under the existing Rate Rider methodology and reflects the Company's proposed modifications to the Rate Rider. The rates in the table are expressed in cents per kilowatt hours ("kWh").

Table 1: Comparison of DSM Rate Riders[10]

DSM Rider Class	Approved 2019 Rate (¢/kWh)	Estimated 2020 Rate Existing Method (¢/kWh)	Estimated 2020 Rate Proposed Method (¢/kWh)	*Percent Change Existing Method to Proposed Method*
Residential	0.184	0.168	0.231	***+38%***
Small General Service	0.274	0.295	0.364	***+23%***
Medium General Service	0.176	0.191	0.257	***+35%***
Large General Service	0.093	0.100	0.149	***+49%***

[10] Estimated 2020 rates are taken from the Company's response to AIR 1-24.

The Company's proposed changes to the computation of the Rate Rider will add approximately $0.47 to the monthly bill of a residential customer using 1,000 kWh per month.

Q. PLEASE PROVIDE AN OVERVIEW OF YOUR RECOMMENDATIONS RELATED TO THE COMPANY'S PROPOSED PROGRAMS COST RECOVERY CALCULATION.

A. I agree with the Company's requests regarding the change to the carrying cost calculation and the amortization period, with certain adjustments. I recommend modifications to the Shared Savings Incentive to ensure the Company receives the protections provided under S.C. Code Ann. § 58-37-20 while reducing the impact to customers. As previously addressed in my testimony, I also recommend the Commission require the Company to calculate avoided costs to determine the value of load reduction using the methodology to be approved pursuant to Act 62 in Docket No. 2019-184-E.

Q. DO YOU AGREE WITH THE COMPANY'S ASSERTION THAT CHANGING THE CARRYING COST TO ITS CURRENT WEIGHTED AVERAGE COST OF DEBT "IS CONSISTENT WITH THE STATUTORY MANDATE" IN S.C. CODE ANN. § 58-37-20 (ROOKS, P.7) AND "MORE CLOSELY MATCHES CARRYING COSTS TO THE COMPANY'S ACTUAL COST OF CAPITAL FOR EXPENSES OF THIS TYPE" (RAFTERY, P.14)?

A. Yes. I agree with Company witnesses Rooks and Raftery that using the weighted average cost of debt, which is the typical cost factor applied to utility investments, is consistent with the "make whole" principle which allows the Company to "recover costs and obtain a reasonable rate of return" on investments in DSM/EE Programs. The Company's weighted average cost of debt as of June 30, 2019 is 5.95%. I recommend the Commission approve 5.95% as the rate to calculate carrying costs on uncovered Program balances subject to amortization.

Q. ARE THE COMPANY'S PROPOSED CHANGES TO THE AMORTIZATION PERIOD OF PROGRAM COSTS REASONABLE?

A. Yes. The reduced amortization period will provide a more accurate cost signal to customers while also reducing carrying costs. However, I recommend further modifications to the amortization of individual Programs later in my testimony.

Q. DO YOU FIND THE COMPANY'S REASONS FOR INCREASING THE SHARED SAVINGS INCENTIVE FROM 6% TO 11.5% TO BE REASONABLE?

A. No. The Company has provided no basis or justification for the need to increase the shared savings incentive beyond the fact that it is consistent with the level of incentive provided to other utilities, is an important increment to earnings, and would somehow compensate the Company for increasing the energy savings through the proposed expansion of the Programs.

Q. HAS THE COMPANY PROPOSED A SUITE OF PROGRAMS COMPARABLE TO THOSE OFFERED BY THE OTHER SOUTH CAROLINA UTILITIES?

A. No. Exhibit GWE-2 compares the Company's newly proposed suite of DSM programs to those currently offered by DEP and DEC. The Company's newly proposed suite of Programs is not comparable to those offered by DEP and DEC.

Q. WILL THE COMPANY'S PROPOSED EXPANDED PORTFOLIO OF PROGRAMS MATCH THE ENERGY SAVINGS OF OTHER SOUTH CAROLINA UTILITIES' DSM/EE PROGRAMS?

A. No. As shown in the Potential Study (Page 25, Table 12), forecasted annual energy savings from the Company's proposed expanded portfolio never exceed 0.7% of previous year sales. DEC reports energy savings of 0.96% of previous year sales[11] and DEP's annual filings show that DEP has achieved 1.50% energy savings as a percent of previous year sales.

Q. WHAT DOES ORS RECOMMEND FOR THE SHARED SAVINGS INCENTIVE?

A. ORS recommends the Shared Savings Incentive be increased from 6% to 9.9% of program savings. This recommendation reflects the fact that the Company's proposed energy savings do not rise to the levels achieved by other South Carolina utilities, and the Company's proposed suite of Programs is not comparable to the other South Carolina utilities.

Q. SHOULD THE SHARED SAVINGS INCENTIVE APPLY TO ALL PROGRAMS?

A. No. Some programs should be excluded from the Shared Savings Incentive computations. In addition, the Company does not receive carrying costs on the unamortized balance of the Shared Savings Incentive. Later in testimony I discuss my recommendations regarding Programs to which the Shared Savings Incentive should not apply.

[11] Exhibit 8, Page 3, of DEC's filing in Docket No. 2019-89-E.

Q. PLEASE EXPLAIN THE ORS RECOMMENDATION TO ALIGN THE AMORTIZATION OF PROGRAM COSTS WITH THE PROGRAM LIFE FOR EACH PROGRAM.

A. Rather than applying a three (3) year amortization to all Program Costs, ORS recommends the amortization should be applied to Programs individually to better align the amortization period with the Program life. For example, the Home Energy Reports Program has a life of one (1) year. The costs for this Program should not be amortized. The costs of any other Programs having lives less than three (3) years should be amortized over the Program life. In other words, Program costs would be amortized over the life of the Program, but for no more than three (3) year. With this methodology, nearly all Program Costs will be amortized over three (3) years, achieving the results requested by the Company. Programs Costs for Programs having lives exceeding three (3) years would be recovered over three (3) years to provide improved cost signals to customers and reduce carrying costs.

Q. WHAT ARE "FOUND REVENUES" AND WHY DOES ORS RECOMMEND THIS ADJUSTMENT TO LOST REVENUES?

A. ORS recommends that Lost Revenues be reduced by "Found Revenues," which are any increases in revenues resulting from any new activity by the Company that causes a net increase in any customer's demand or energy consumption. For example, if the Company partakes in marketing activities that increase the energy consumption of one (1) or more customers, the resulting increased revenues would be considered Found Revenues. These Found Revenues would reduce the recovery of Lost Revenues and reduce the Rate

Rider. The current Rate Rider computations for DEP include the Found Revenue adjustment.[12]

Q. PLEASE SUMMARIZE ORS'S RECOMMENDED ADJUSTMENT TO THE SHARED SAVINGS INCENTIVE.

A. I recommend the Shared Savings Incentive be increased to 9.9% to reflect the fact that energy savings proposed by the Company are not as developed and robust as other South Carolina utilities. In addition, certain Programs should be excluded from the computation of the Shared Savings Incentive. These Programs include any low-income Programs, education Programs, and research and development activities not directly associated with a Program. As the Shared Savings Incentive is intended to ensure the Company is compensated for the reduction in net income as a result of implementing Programs, education Programs and research and development activities cannot be tied directly to kWh savings. Although low-income Programs do generate kWh savings, these types of Programs are typically not cost effective and therefore should not bear the additional cost of the Shared Savings Incentive. Currently the only Program in the Company's suite of proposed Programs to which the Shared Savings Incentive should not be applied is the Neighborhood Energy Efficiency Program as it is targeted directly to low income customers.

Q. PLEASE SUMMARIZE YOUR RECOMMENDED ADJUSTMENTS TO THE COMPANY'S PROPOSED METHOD OF CALCULATING COST RECOVERY.

A. ORS recommends the following adjustments to the Company's cost recovery

[12] Commission Order No. 2015-596.

proposals:

1) Modify the amortization period for Program costs from the proposed three (3) year period for all Programs to an amortization period that is no greater than three (3) years and based on the life of each Program;
2) Reduce the Lost Revenues calculation by "Found Revenues" as explained earlier in my direct testimony;
3) Increase the Shared Savings Incentive to 9.9%;
4) Exclude certain Programs, and activities not directly tied to a Program, from the computation of the Shared Savings Incentive; and,
5) Adjust the avoided cost calculations used to determine the value of load reductions to align with the methodology as approved by the Commission under Act 62 in Docket No. 2019-184-E.

Q. ARE THE COMPANY'S PROPOSED CHANGES TO THE OPT-OUT PROVISION REASONABLE?

A. Yes. It is reasonable to limit the Opt-Out period to the maximum period over which the DSM costs incurred on behalf of the customer would be recovered. In this case, that maximum period would be three (3) years.

Q. DOES ORS HAVE ANY OTHER RECOMMENDATIONS REGARDING THE PROPOSED RATE RIDER?

A. No.

V. <u>Conclusion</u>

Q. PLEASE PROVIDE A SUMMARY OF YOUR RECOMMENDATIONS.

A. ORS offers the following recommendations for the Commission's consideration:

1) Approve the Company's proposed modified and expanded portfolio of Programs;
2) Approve the Company's request for a five-year Program period;
3) Adjust the avoided cost calculations used to determine the value of load reductions to align with the methodology as approved by the Commission under Act 62 in Docket No. 2019-184-E;
4) Require the Company to amortize Program costs for each Program individually, for a period equal to the life of the Program, but no more than three (3) years;
5) Approve the Company's request to change the carrying cost rate to reflect the embedded cost of long-term debt;
6) Approve the Company's request for the effective date of the change in carrying cost as December 1, 2019 to align with the implementation of the new and expanded Programs;
7) Require the Company to reduce Lost Revenues by "Found Revenues";
8) Increase the Shared Savings Incentive to 9.9% of the net benefits provided by certain Programs;
9) Exclude from the Shared Savings Incentive calculation low income Programs, education Programs, and research and development activities not directly associated with a DSM or EE Program;

10) Approve the Company's proposed changes to the Opt-Out provision;

11) Require the Company to re-evaluate new direct load-control Programs when AMI becomes available in the DESC territory;

12) Require the Company provide the Commission with an updated estimate of the 2020 rate for a residential customer using 1,000 kWh based on the Commission's Orders in this proceeding; and

13) Require the Company provide the Commission with updated clean and red-line versions of the proposed Rate Rider reflecting the Commission's determinations in this case.

Q. WILL YOU UPDATE YOUR TESTIMONY BASED ON INFORMATION THAT BECOMES AVAILABLE?

A. Yes. ORS reserves the right to revise its recommendations via supplemental testimony should new information not previously provided by the Company, or other sources, become available.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

EDUCATION: Master of Science, Applied Mathematics, Georgia Institute of Technology, 1976
Bachelor of Science, Applied Mathematics, Georgia Institute of Technology, 1974

PROFESSIONAL MEMBERSHIP: Institute of Electrical and Electronic Engineers

EXPERIENCE:

Mr. Evans is currently the President of Evans Power Consulting, Inc. He has served the electric power utility industry for over thirty-five years. His primary areas of expertise include market price forecasting, integrated resource planning, the analysis of purchased power, system operations, net power costs, interruptible rates, the optimal scheduling of generator maintenance, the computer simulation of electric power systems, the integration of renewable generation and demand-side management. As an expert witness in these areas, Mr. Evans has submitted expert testimony on 58 occasions, before the public utility commissions in Alabama, Arkansas, Colorado, Delaware, Georgia, Michigan, Mississippi, Nevada, Oklahoma, Pennsylvania, South Carolina, South Dakota, Vermont and Utah; and also before the FERC, and in both state and federal court. He is an expert in the computer modeling of electric power systems and the use of PROMOD IV, Strategist, GRID, POWERSYM, EGEAS, ELFIN and ENPRO.

Specific Experience Includes:

2011-Present Evans Power Consulting, Inc.

Michigan Environmental Council – Presented expert testimony concerning the economic operation of the coal fleets of DTE Electric Company and Consumers Energy Company. Developed an hourly after-the-fact process to evaluate the cost-effectiveness of the coal fleets.

Michigan Environmental Council – Presented expert testimony on the Integrated Resource Plans of DTE Electric Company and Consumers Energy Company.

South Carolina Office of Regulatory Staff – Testified for staff on the proposed portfolio of Demand-Side Programs proposed by South Carolina Electric & Gas, Duke Energy Progress and Duke Energy Carolinas; and performed annual reviews of the DSM programs and the DSM rate riders of the three companies.

Utah Department of Public Utilities – Testified for staff in two PacifiCorp rate cases concerning net power costs, testified on PacifiCorp's application to install Selective Catalytic Reduction Systems on two coal units, and performed a review of PacifiCorp's thermal maintenance practices and procedures.

Arizona Corporation Commission – Evaluated the 2012 and 2014 Integrated Resource Plans of Arizona Public Service Company, Tucson Electric Power Company, UNS Electric, Arizona Electric Power Cooperative, and the Salt River Project; and presided over public meetings concerning the IRPs.

1997-2011 Slater Consulting

Utah Department of Public Utilities – Testified in two PacifiCorp rate cases concerning the appropriate level of net power costs, including wind integration costs and other issues.

South Dakota PUC – Testified on the Integrated Resource Plans of Black Hills Power and Otter Tail Power, and the validity of a coal fired generation addition and a wind generator addition.

Golden Spread Electric Cooperative – Presented expert testimony in a FERC complaint concerning the actual operation of an economy sales agreement between Golden Spread and Southwestern Public Service Company.

Cooper Nuclear Plant - Development of the estimated damages caused by imprudent outages of a Nebraska nuclear generating unit.

Millstone 3 Nuclear Unit - Analysis of the replacement energy costs for the Millstone 3 nuclear unit on behalf of the co-owners.

Independent Power Producers - Presented expert testimony before the Alabama and Mississippi PSCs concerning the construction of new combined cycle facilities in those states.

S.C. State Energy Office - Developed a report summarizing and evaluating the Integrated Resource Plans filed by the electric utilities of South Carolina.

1989-1997 GDS Associates, Inc.

Mr. Evans served as a principal and the Manager of the System Modeling group, where he was responsible for performing analyses, providing expert testimony and developing customized software. He is an expert in the use of the industry standard computer models PROMOD III, PROSCREEN II, PROVIEW, MAINPLAN, CAT II and ENPRO. A sampling of representative assignments follows:

Tenaska, Air Liquide & Tenneco - Developed forecasts of market clearing prices for electricity in the ERCOT region.

GEMC - Produced a forecast of market clearing prices for electricity in the SERC region and estimated stranded costs.

Central Virginia Electric Cooperative - Designed, developed and installed software to allow the Cooperative to purchase economy energy in an optimal manner on a daily basis.

City of Grand Island, Nebraska - Developed the initial Integrated Resource Plan for the City of Grand Island.

Georgia PSC - Evaluated the 1995 Integrated Resource Plans filed by Georgia Power and Savannah Electric. Developed alternative Integrated Resource plans that were approved by the Commission.

Nucor Steel - Audited the bills for electric service for the Nucor-Hickman Steel Mill.

Nucor Steel - Testified before the Arkansas PSC concerning the reasonableness of a buy-through clause for interruptible customers.

Nucor Steel - Developed a comprehensive forecast of the likely levels of interruptions of service over the next ten years.

South Dakota Public Utility Commission - Evaluated the rate filing and Integrated Resource Plan filed by Black Hills Power & Light.

Georgia PSC - Evaluated Georgia Power's initial RFP for power, all bids received and Georgia Power's selection process. Testified before the Georgia PSC concerning the reasonableness of Georgia Power's evaluation process and resulting request for certification.

Michigan Attorney General - Performed studies concerning the availability of the Midland Cogeneration Venture and Consumer Power Company's avoided costs.

Michigan Attorney General - Developed estimates of cost reductions due to improved projected fossil performance and changes in cogeneration levels in a Consumers Power rate case.

Pennsylvania PUC - Testified concerning the capacity needs of a Pennsylvania utility and the appropriate avoided costs due potential cogeneration projects.

Golden Spread Electric Cooperative - Developed detailed historical reconstructions of five years of hourly operations of a major Texas utility to illustrate the penalties arising to wholesale ratepayers as a result of off-system sales.

Sam Rayburn G&T - Designed, developed and implemented a PC-based software system to facilitate daily load forecasting, optimal resource scheduling and inadvertent accounting in a user-friendly fashion.

Tex-La Electric Cooperative - Designed, developed and implemented a similar software system for daily load forecasting and optimal resource scheduling. This application also included the development of an optimization process which maximizes the total economy energy scheduled while adhering to limitations on load factor and the number of hourly changes.

PG&E-Bechtel Generating Company - Assisted this NUG developer in forecasting the dispatchability of a project and estimating likely costs in a power bidding solicitation.

1980-1989 Energy Management Associates, Inc. - now known as New Energy Associates

While with EMA, Mr. Evans performed product development, maintenance programming and client support on the three major products marketed and developed by EMA - PROMOD III, PROSCREEN II, and MAINPLAN. He is extremely well-versed in the development of databases for these tools and in applying these tools to particular studies.

As MAINPLAN Product Manager (1985-1989), Mr. Evans supervised and directed the development, maintenance, and client support for MAINPLAN - the software package that is the industry leader in the area of generating unit maintenance scheduling. The client base for MAINPLAN grew from two clients to over thirty clients during his involvement. Also during his tenure, a chronological production costing model was added to MAINPLAN. This highly detailed model has been used to evaluate interchange opportunities, the cost of forced outages, short-term fuel requirements and unit commitment strategies.

Publications:

Backcasting - A new computer application can determine historical truth for utilities that must refute damage claims, Fortnightly, October 1, 1993.

"Avoiding and Managing Interruptions of Electric Service Under an Interruptible Contract or Tariff", Industrial Energy Technology Conference, April, 1995.

“Analysis and Evaluation of the Integrated Resource Plans of the Investor-Owned and State-Owned Electric Utilities in South Carolina”, for the South Carolina State Energy Office, April, 1998.

Programming Languages: Visual Basic, C++ for Windows, C , FORTRAN and COBOL.

Demand-Side Management and Energy Efficency Programs

	DESC	DEP	DEC
RESIDENTIAL:			
	Appliance Recycling	Appliance Recycling	Energy Efficiency Education
	EnergyWise Online Store	Energy Eductaion for Schools	Energy Assessments
	Heating & Cooling	Home Advantage Program	Energy Efficient Appliances & Devices
	Home Energy Check-Up	Home Energy Improvement	HVAC Energy Efficiency
	Home Energy Reports	Lighting	Income Qualified Efficiency & Weatherization Service
	Multifamily*	Load Control (EnergyWise)	Multi-Family Energy Efficiency
	Neighborhood Energy Efficiency	Low Income - Neighborhood Energy Saver	My Home Energy Report
		Multi Family Energy Efficiency	Power Manager
		My Home Energy Report	
		New Construction	
		Pilot CFL Program	
		Save Energy & Water Kit	
		Solar Water Heating Pilot	
Number of Programs	**7**	**13**	**8**
COMMERCIAL & INDUSTRIAL:			
	Commercial Small Business Direct Install	Business Energy Report	Energy Efficient ITEE
	EnergyWise for your Business	CIG Demand Response Automation	Energy Efficient Process Equipment Products
	Municipal LED Lighting*	CIG Energy Efficiency	Energy Efficient Pumps and Drives
		Distribution System Demand Response	EnergyWise for Business
		EnergyWise Business	Power Share
		General Service Lighting	Power Share Call Option
		Small Business Energy Saver	Small Business Energy Saver
			Smart Saver Custom
			Smart Saver Custom Technical Assessments
			Smart Saver Efficient Food Service Products
			Smart Saver Energy Efficient HVAC Products
			Smart Saver Energy Efficient Lighting Products
			Smart Saver Performance Incentive
Number of Programs	**3**	**7**	**13**
***TOTAL* Number of Programs**	**10**	**20**	**21**

*New Programs